

ART. I.—*On the Utilization and Disposal of Excreta.*

BY S. W. GIBBONS, F.C.S.

[Read 13th April, 1874.]

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ART. II.—*On the forthcoming Transit of Venus.*

BY R. L. J. ELLERY, F.R.S., F.R.A.S.

[Read 11th May, 1874.]

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ART. III.—*On a late Extraordinary Escape of a Miner from Drowning.* BY D. KENNEDY, ESQ.

[Read 8th June, 1874.]

[ABSTRACT.]

The miner, McCaviston was imprisoned for 27 hours at the end of a 140-foot drive, water at the same time standing in the shaft to the height of 52 feet above the level of the top of the drive.

The end of the drive in which McCaviston took refuge, opened into a long chamber crossing it at right angles and forming with the drive a sort of letter T. The length of this chamber was 80 feet; average height, 7 feet; width, 7 feet. At the end of the drive at intersection with chamber, the roof rose 11 feet from the floor. The drive itself has a rise of 4 feet; height, 6 feet 6 inches; width, 5 feet. Consequently when the water rose in the shaft to the top of the mouth of the drive, there was a mass of air in the latter, having at the base an area of 4 feet high by 5 feet wide, thinning away to nothing at the mouth of the drive. At the same time, in the chamber or cross-cut above referred to, there would be a stratum of air above the water level 80 feet long, 4 feet 6 inches high, and 7 feet wide. The water having reached the level of the top of the mouth of the drive, it was now impossible for the confined air in the drive and chamber to escape; and as the water rose in the shaft, so this air became more and more compressed towards the cross-cut. When the water in the shaft was at the level of